

## REMARKS

Claims 1-8 remain in this application. Claims 1-2 and 4-7 are amended. Claim 8 is new. No new matter is introduced.

Claims 1-3 are rejected under 35 U.S.C. §102(b) as being anticipated by Fujikura (JP 2002-310222); and Claims 4-7 are rejected under 35 U.S.C. §103(a) as being unpatentable over Fujikura (JP 2002-310222) in view of Fujikura (JP 2002-62067). Applicant would like to traverse the Examiner's rejection below by pointing out several important differences between the flat heat pipe of the present invention and those taught by the references cited by the Examiner.

At the outset, Applicant respectfully submits that the flat heat pipe of the present invention is totally different and patentably distinguishable from the heat pipes of the present invention. For example, the flat heat pipe of the present invention contains a plurality of heat conduction pillars which are disposed at or around a hot spot of the flat heat pipe enhance heat transfer of the flat heat pipe. More specifically, because the pillars contained in the heat pipe of the present invention are for conducting heat, they are arranged at or around the hot spot. In comparison, the pillars taught in the Fujikura (JP 2002-310222) reference are to provide structural support. The Fujikura (JP 2002-310222) reference never taught or suggested providing heat conduction pillars which are disposed at or around heat spot. The Fujikura (JP 2002-62067) reference taught the use of a pillar-like wick structure, but it never taught or suggested using any heat conduction pillars. A wick structure, because of its porous structure, is a poor heat conductor.

To better illustrate some of the key difference between the heat pipe of the present invention and those taught in the prior art references, Claim 1, as amended, is duplicated below:

### Claim 1:

1. A flat heat pipe having a vacuum chamber which is provided with an evaporator in contact

with a heating element, and a condenser connected to a cooling device, said vacuum chamber being provided in a hollow interior with a wick structure, and a predetermined amount of a working fluid by which an evaporation-condensation cycle is effected;

wherein said vacuum chamber is provided in the hollow interior with *a plurality of heat conduction pillars*;

further wherein said heat conduction pillars are in contact with an upper wall and a lower wall of the hollow interior of said vacuum chamber, and *said heat conduction pillars are disposed at or around a hot spot of the flat heat pipe to enhance heat transfer of the flat heat pipe.*

Applicant respectfully submits that, as discussed above, the flat heat pipe of the present invention contains a plurality of heat conduction pillars which are disposed at or around a hot spot of the flat heat pipe enhance heat transfer of the flat heat pipe. This key element was never taught or suggested in any of the prior art references cited by the Examiner.

Furthermore, Applicant respectfully submits that, because the heat conduction pillars of the present invention are provided to effect maximum heat transfer, in addition to the requirement that they be arranged at or around the heat spot, they can also be structurally differently from each other. For example, they can be formed to have different cross-sectional area and shape to further enhance heat transfer (as claimed in Claim 2). Also, some of the heat conduction pillars of the present invention can be provided to contain a pillar-like wick structure, arranged alternately with the non-wick structure heat conduction pillars (as claimed in Claim 4). Applicant respectfully submits that none of these elements were taught or suggested in any of the prior art references cited by the Examiner.

In summary, Applicant has reviewed the prior art references cited by the Examiner and found that none of the references, either alone or in combination thereof, taught or suggested many of the

key elements of the present invention. Applicant respectfully submits that, since many of the important limitations are lacking from the prior art teaching, a prima facie case cannot be made. In re Fine, 5 USPQ2d 1596 (Fed. Cir. 1988).

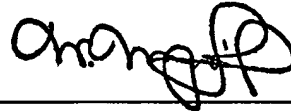
In light of the foregoing, it is believed that the present invention is in condition for allowance. And Applicant respectfully requests that a timely Notice of Allowance be issued in this case. If the Examiner has any question, he or she is invited to call or fax Applicant's counsel at the telephone numbers below.

Respectfully Submitted,

8/13/04

Date

**PTO Customer No. 022192**



---

W. Wayne Liauh, Reg. No. 34,212  
Law Office of Liauh and Associates  
4224 Waialae Ave., Suite 5-388  
Honolulu, HI 96816  
Telephone: (775) 363-2886  
Telecopier: (775) 599-0768